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ON THE PERIOD AND AMPLITUDE FIELDS AND CONDITIONS OF  
MICROSEISM PROPAGATION IN THE ATLANTIC AND ARCTIC  
OCEAN

The reason of microseism generation and propagation is not clear at the present time. This subject is very important for the cyclone forecast.

The analysis of the data obtained on the tripartite station (Pulkovo, Jalta) allowed to make the conclusion that the microseisms are generated in the rear region of cyclone with cold front. However, the observations, performed at another tripartite stations don't confirm the above mentioned conclusions (Murmansk). Therefore it was important to investigate the microseism propagation in different conditions.

In this paper we consider the distortions of microseism propagation direction and the period and amplitude fields of microseisms, registered in the seismic stations of the Soviet Union.

1. The propagation of surface waves depends on the water masses. This dependence was calculated by us. The results of calculations have shown that it is necessary to take into account the water refraction in the ocean with different depths if we want to determine the coordinates of microseism sources.

2. Based on the data, obtained from the constant seismic stations of the Soviet Union we have attempted to determine the microseism fields of periods and amplitudes. We have calculated the observations of 10 microseismic storms. The analysis of evaluations has shown that the seismic storms, generated by cyclones in the Atlantic ocean and the Northern seas may be registered by the all European stations, in the Asia till Irkutsk.

Some cyclones (which generally move along Kola Peninsula) have generated the increased microseisms and their maximum comes 6-8 hours later then the intensity maximum of cyclone. The amplitude of microseism depends directly on cyclone intensity, it decreases as the epicentric distance increases. The period field

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has another nature. All the stations may register microseisms with the periods of 4,5 - 8 sec. independently of epicentric distance.

In these limits the microseism periods increase with the growth of microseism amplitudes, the microseism intensity maximum coinciding in time with the period maximum. The deep cyclones generate the microseisms with periods of 6 - 7 sec. Cyclones which are not so deep generate microseisms with periods of 5-6 sec. The periods don't depend on the ocean depth, where the cyclone, generating microseisms, moves.